

## NOTES ON CERTAIN SPECIES OF MAMESTRA.

By JOHN B. SMITH, Sc. D.

In 1852, Guenée described *Hecatera laudabilis* in Vol. II, p. 30 of his Noctuelites, and figured it very recognizably on Pl. VIII, figure 4. The locality given was "Amerique septentrionale," Coll. Doubleday, and the larva was described from a figure of Abbot. The type is now in the British Museum.

In 1856, Walker described *Hapalia indicans* in Vol. X, p. 359 of the British Museum Catalogue, and records two specimens, ♂ and ♀ from E. Florida, presented by Doubleday. In 1857, in Vol. XI, p. 511, of the same publication, Walker refers to *Hecatera laudabilis* Gn., gives a brief latin diagnosis and records 4 examples: 2 from East Florida out of the Doubleday collection, and 2 without locality out of the Milne Collection. He apparently had no idea that this was the same species that he had described in a previous volume.

In 1868, Grote and Robinson referred *indicans* as a synonym of *laudabilis*, in the Trans. Am. Ent. Soc. II, p. 78, after examining the types, and that reference was accepted by me and more recently by Hampson.

In 1860, Wallengren described *Hecatera strigicollis* in the Wien. Ent. Monatschr., IV, 170, and gave the locality as California. That species remained unidentified in our lists until 1891 when, in my revision of *Mamestra*, I re-published the description without, at that time, suggesting its identity with any other described species. In 1893, after seeing the British Museum collections, I referred the species, in my Catalogue of Noctuidæ to *laudabilis*, and in this reference Hampson has also followed me.

In 1875, Grote described *Mamestra illaudabilis* in Vol. VII, p. 27, of the Canadian Entomologist, differentiating it very briefly from *laudabilis*. It is recorded from California and from Vancouver Island, out of the Henry Edwards Collection, and both sexes were present. In 1881, Mr. Grote lists *illaudabilis* as a variety of *laudabilis*, and again points out certain color differences between the eastern and western specimens: differences which, unfortunately, are not constant nor, as the distribution given proves, very useful in separating the species. In my revision of 1891, I accepted Mr. Grote's ranking of the species, but was in error as to the form to which the name *illaudabilis* should be applied. In my figure of the genitalia I obviously got hold of

an imperfect or broken structure and, while it is reasonably accurate so far as it goes, it is altogether misleading as representing the real structure of the *illaudabilis* form which, obviously, I used for the dissection. In 1905, Hampson, having before him the types of Guenée, Walker and Grote, lists all names under *laudabilis*, but as "Ab. 2, *illaudabilis*," he designates those forms in which the green tinge is almost entirely replaced by white.

During the two or three years last past it has been my fortune to handle very large series of these forms from all parts of the country, and the more of them I handled, the less satisfied I became with the association. Recently, in re-arranging the species in this series, I gathered in all my material for comparison, and demonstrated to my own satisfaction two very good species; the one extending throughout the eastern and southern States and into Texas, the other through the Rocky Mountain region into Arizona and west to the Pacific Coast. The true *laudabilis* is a chunky, heavily built species with comparatively short, broad, obtuse primaries. *Strigicollis*, which must be used for the other species, is slighter throughout, the primaries narrower, more trigonate, with apices more obvious. In color, *laudabilis* when fresh, is always greenish, fading out to whitish, with the median space ranging all the way from reddish to black, often greenish below the sub-median vein. The space also tends strongly to narrow inferiorly. In both sexes the secondaries may range from blackish to almost pure white, and the general impression is that of a stout, heavily built insect. *Strigicollis*, on the other hand, never has that delicate green tinge in even the freshest examples, and many of them are almost clear white. In others there is a mossy olivaceous tinge which often darkens the normally pale portions of the wing. I have never seen a specimen with a reddish median area, but this may range anywhere from olivaceous brown to black. The median space while it tends to narrow inferiorly, never approximates the median lines so closely, and does not often tend to give a wedge-like impression. The secondaries are more uniformly pale in both sexes, and the impression, as already stated is of a slighter species than *laudabilis*.

Finally, as there was plenty of material available, I tested the male genitalic structures once more, and demonstrated the distinctness of the two series beyond peradventure. A comparison of figure 1 with figures 2, 3 and 4, will show that it is not a matter of slight differences, but of quite a radical change. In *laudabilis*,

of which specimens from New York to Texas were examined, there was not enough variation to warrant more than a single figure. The harpes are very broad at base, with a very narrow rather short extension, and a small extension at tip. There are two distinct claspers and one of them is spatulate. The corneous sheath of the penis is very long in all the examples.

Seven examples of *strigicollis* were studied, coming from Colorado, Arizona and Utah, and three figures represent all the variations found. These are practically all in the size of the penis sheath, though none is in the least like that of *laudabilis*. The differences in the *uncus* are due to differences of position, the drawings having been made with a camera lucida. Attention is especially directed to the uniformity of the outer angle of clasper at point of constriction.

Two examples a ♂ and ♀ from Kaslo, B. C., do not fit into the series of *strigicollis* and, in my opinion, represent a good species.

**Mamestra restora** n. sp.

Head and collar pale greenish over white; palpi black at sides, the small terminal joint pale; vertex with an admixture of black scales. Collar with a distinct black band crossing above the middle. Thoracic disc mottled with black, white and pale green. Primaries, the pale areas light greenish, basal and median lines white-filled, ornamentation otherwise black. All the lines geminate and broken. An irregular black spot at the termination of the basal line inferiorly. Median space mostly black, marked with mossy green below the sub-median vein. The outer part of wing is black powdered, forming a black patch at anal angle, more conspicuous than in its allies. The fringes are deeply marked with black and narrowly cut with white. Claviform deeper black, extending almost across the median space. Orbicular small, round, with a blackish central dot and a greenish annulus. Reniform large, superiorly dilated, annulate with white, with a mossy greenish filling. Secondaries smoky in both sexes; uniformly so in ♀ paler at base in ♂. Beneath, primaries blackish; secondaries with blackish powderings along costa and outer margin, a dusky discal spot and an extra-median line.

Expands 1.08-1.12 inches equals 27-28 mm.

*Habitat:* Kaslo, B. C., VII, 10, IX, 1.

One ♂ and one ♀ in good condition. Type of maculation like *strigicollis*, but darker throughout, the paler areas shaded with green, the anal angle of primaries with a dark blotch, secondaries dark in both sexes.

It is doubtful whether I would have dared to describe this as a distinct species in spite of its different appearance, were it not for the difference in the genitalia of the male. Comparison of figure 5, with figures 2, 3 and 4 will show to what I refer. In *restora* the harpes curve evenly to the narrowly extended tip, and form no obvious angle, while the extension of tip itself is shorter and broader. The claspers are also more slender and more separated than in the allied forms, and for the present I believe that we have a very good species to deal with, although undoubtedly a recent off-shoot from *strigicollis*.

*Mamestra marinitincta* Harvey, was described in 1875, in the Bull. Buf. Soc. Nat. Sci., II, 273, and is evidently a local offshoot from *strigicollis*, in a different direction from *restora*. Here the angle of harpes is intensified instead of lessened, and the extension of the tip is carried further. The penis sheath is very much elongated and more like *laudabilis*; but with a very long irregular series of short spinules running longitudinally. The small clasper has been reduced to a mere vestige, while the larger has not changed materially.

Superficially the wing form of *strigicollis* is held, while the median area is an exaggeration of the tendency to narrow it in *laudabilis*. Accompanying this is the evening of the median lines and the elimination of the second element, so that they are scarcely geminate except on costal area. Thus far the species is recorded from Texas only, and most of the examples are from the Belfrage collections in Bastrop Co. In my collection is one ♀ from Kerrville, and one ♀ labelled "Tenn.," out of the Kemp collection. These two examples are very similar to each other; but may possibly be distinct from *marinitincta*. I do not think they are, at present, and await further material for closer study.

*Mamestra spiculosa* Grote, is a species that has always been rare in collections and the two pairs now before me I owe to the kindness of Mr. Doll. The figure of the ♂ genitalia in my revision lacks detail, and a better drawing is presented here as an illustration of an intermediate form between the *olivacea* and *laudabilis* types;—the harpes of *illaudabilis* with the tip of *olivacea* indicated by the drawn out point. The clasper is long, slender and single.

In *Mamestra stricta* Wlk., and its variety *ferrea*, the structures become more compact except for the clasper, which is longer and more slender. I have twenty examples before me illustrating

the gradations from the deep red brown to the yellowish brown type, and the species as a whole seems quite recognizable and, except for this variation in ground, very constant.

*Mamestra circumcincta* Smith, was described from two Californian examples representing the two sexes, which I placed with *stricta* on genitalic characters, while comparing it with *olivacea* in fascies. The ♂ type is in my collection, and another ♀ example recently received from San Francisco, California, makes re-examination possible, as well as a new figure of the ♀ genitalia available. Hampson in his Vol. V, p. 176, makes this a synonym of *stricta*; but in my opinion quite without warrant. The total habitus and ground color are different, while the differences pointed out in my original description are intensified in the fresh example which is darker and more smoky throughout. Neither example has in the secondaries any of that yellowish tinge that is in all specimens of *stricta* ever seen by me. As for the genitalia, I can claim very little for *circumcincta* as against *stricta*. The two are very much alike, and such differences as exist might easily be within range of variation. A comparison of figures 8 and 9 will make this clear.

*Mamestra tenisca*, recently described by me in the Proc. N. Y. Ent. Soc., is an intensified and enlarged *stricta*, and I have little doubt is mixed with the older species in collections; but I believe it to be well distinguished and take this opportunity to offer a figure of the male genitalia which, while preserving their close resemblance to those of *stricta*, depart noticeably from the type. Especial attention is directed on this point to the curved series of spinules on the penis sheath, as compared with those in *stricta* and *circumcincta*.

#### EXPLANATION OF FIGURES ON PLATE XXIII.

- FIG. 1. *Mamestra laudabilis*, from N. Y., Ga., and Fla. specimens.  
 FIG. 2. *Mamestra illaudabilis*, from Ariz. and Denver, Colo., specimens.  
 FIG. 3. *Mamestra illaudabilis*, from Arizona, desert specimens.  
 FIG. 4. *Mamestra illaudabilis*, from Utah specimen.  
 FIG. 5. *Mamestra restora*: from type ♂.  
 FIG. 6. *Mamestra maritimitincta*: Texas example.  
 FIG. 7. *Mamestra spiculosa*: Arizona.  
 FIG. 8. *Mamestra stricta*.  
 FIG. 9. *Mamestra circumcincta*.  
 FIG. 10. *Mamestra tenisca*: from one of the para-types.